

Claims

- [c1] A method for use in a wellbore, comprising:
running a tool string to an interval of the wellbore;
activating a first component in the tool string to create a transient underbalance pressure condition in the wellbore interval; and
activating a second component in the tool string to create a transient overbalance pressure condition in the wellbore interval.
- [c2] The method of claim 1, wherein activating the second component comprises initiating a propellant in the second component.
- [c3] The method of claim 2, wherein initiating the propellant in the second component comprises initiating the propellant in conjunction with firing explosive devices in the second component.
- [c4] The method of claim 3, wherein firing the explosive devices comprises firing shaped charges.
- [c5] The method of claim 4, wherein the second component comprises a carrier housing containing the propellant and the shaped charges, the method further comprising

punching openings in the carrier housing in response to firing the shaped charges.

[c6] The method of claim 1, wherein the first component comprises a housing in which at least one explosive is provided, wherein activating the first component comprises activating the at least one explosive in the housing to create openings in the housing to expose a chamber inside the housing to wellbore fluids for creating the transient underbalance pressure condition.

[c7] The method of claim 6, wherein activating the at least one explosive comprises activating a detonating cord.

[c8] The method of claim 7, further comprising providing a capsule perforating gun activatable by the detonating cord, the capsule perforating gun connected to the housing.

[c9] The method of claim 1, wherein activating the second component occurs while the transient underbalance pressure condition is still present.

[c10] The method of claim 1, further comprising providing, using a timer, an interval of one of milliseconds, seconds, and minutes between the transient underbalance and overbalance pressure conditions.

- [c11] The method of claim 1, further comprising providing an interval of microseconds between the transient underbalance and overbalance pressure conditions.
- [c12] A method comprising:
providing a carrier in a tool string; and
selecting one of plural modules to place in the carrier, the plural modules comprising a first module containing a propellant and a second module containing an explosive.
- [c13] The method of claim 12, wherein selecting the first module is performed to enable creation of a transient overbalance condition in a wellbore interval, and wherein providing the first module comprises providing one or more explosives in a housing, the method further comprising:
punching one or more openings in the housing by activating the one or more explosives.
- [c14] The method of claim 12, wherein selecting the second module is performed to enable creation of a transient underbalance condition in a wellbore interval.
- [c15] An apparatus comprising:
a propellant having a plurality of cavities; and
explosive devices mounted in the cavities.

- [c16] The apparatus of claim 15, wherein the explosive devices comprise shaped charges mounted in the cavities.
- [c17] The apparatus of claim 15, further comprising a detonating cord ballistically connected to the explosive devices,
wherein activation of the detonating cord causes detonation of the explosive devices and initiation of the propellant.
- [c18] An apparatus comprising:
a strip;
explosive devices mounted on the strip; and
propellant inserts positioned between the explosive devices.
- [c19] The apparatus of claim 18, wherein the explosive devices comprise shaped charges.
- [c20] The apparatus of claim 18, further comprising a detonating cord ballistically connected to the explosive devices and the propellant inserts.
- [c21] The apparatus of claim 18, wherein the explosive devices are arranged in a spiral pattern.
- [c22] A tool string comprising:
a first component activatable to create a transient un-

derbalance pressure condition in a wellbore interval proximal the tool string; and
a second component activatable to create a transient overbalance pressure condition in the wellbore interval.

- [c23] The tool string of claim 22, wherein the first component comprises a carrier containing explosive devices, wherein activation of the explosive devices causes openings to be created in the carrier to enable the communication of wellbore pressure into a low-pressure chamber of the carrier to create the transient underbalance pressure condition in the wellbore.
- [c24] The tool string of claim 22, wherein the second component includes a propellant that is initiated to generate high-pressure gas in the wellbore interval to create the transient overbalance pressure condition.
- [c25] The tool string of claim 24, wherein the propellant includes cavities, and the second component comprises explosive devices mounted in the cavities.
- [c26] The tool string of claim 25, wherein the explosive devices comprise shaped charges.
- [c27] The tool string of claim 24, wherein the second component includes a carrier having a plurality of explosive devices, and the propellant is included in the carrier.

[c28] The tool string of claim 22, wherein the second component includes a propellant and a pressure chamber to receive high-pressure gas generated by initiation of the propellant.

[c29] The tool string of claim 28, wherein the second component further comprises a rupture element adapted to rupture the rupture element by the pressure in the pressure chamber.

[c30] The tool string of claim 29, wherein the second component further comprises a vent sub having one or more openings to release high-pressure gas from the pressure chamber.

[c31] An apparatus comprising:
a propellant;
a pressure chamber, the pressure chamber to receive high-pressure gas released by initiation of the propellant; and
a rupture element to be ruptured by pressure greater than a predetermined level in the pressure chamber.

[c32] The apparatus of claim 31, further comprising a vent sub to vent high pressure in the pressure chamber in response to rupture of the rupture element.

- [c33] A method for use in a wellbore, comprising:
running a tool string to an interval of the wellbore;
activating a first component in the tool string to create a transient overbalance pressure condition in the wellbore interval; and
activating a second component in the tool string to create a transient underbalance pressure condition in the wellbore interval.
- [c34] The method of claim 33, wherein activating the second component occurs while the overbalance condition is still present.